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Electronic Data Processing

Some Behavioral Aspects

Accountants Showing Renewed Interest in EPD

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Many articles have been written and a great deal of research has been conducted in recent times surrounding the rapid growth in sophisticated computer-based information systems. A number of EDP articles have addressed the technological advances in hardware, the development of more efficient software, and the ever-expanding number of EDP applications. A lesser number of articles have addressed the behavioral aspects of implementing EDP systems. This article concentrates on a review of some potential behavioral changes and/or problems which, because of recent trends, may be encountered by the accountant when associated with EDP systems and when dealing with client systems management personnel. It also suggests some potentially new problems for the accountant when dealing with top management.

In the early development and implementation phases of EDP systems in business, accountants enjoyed an "almost-proprietary" association with such systems. Anyone with even a superficial knowledge of EDP is well aware of this. Over the past several decades, however, several rather obvious phenomena occurred which deprived the accountant of this association. The most noteworthy phenomenon was the extensive application of EDP in virtually all areas of business, and, of course, the resultant "information explosion." Consequently EDP was no longer viewed solely as "accounting territory." Second was the rapid technological advancement made toward more sophisticated and efficient hardware and software. A third phenomenon, and one not unexpected, was the emergence of "new professionals" in the systems and data

processing spheres. Not only did many new career positions open, but also new certifications developed, such as: the Certified Data Processor (CDP), the Certified Information Systems Auditor (CISA), and the Certificate in Production and Inventory Management (CPIM). Of course, in the accounting area, there also evolved the Certified Management Accountant (CMA) and the Certified Internal Auditor (CIA).

Currently, however, there seems to be a change taking place in the MIS and EDP environment; namely, the apparent resurgency of accounting professionals in EDP. Recent events indicate that the accounting profession is making overtures which might "re-capture" some of the EDP territory by pursuing more vigorously the "markets" which are found in computer-based management advisory services. For a number of years the AICPA had issued *Statements on Management Advisory Services and Management Advisory Services Guidelines*. Also, during the 1960s, it issued several *Computer Research Studies*. It was not until 1981, however, that the Institute published official standards governing MAS engagements. In December 1981 the AICPA promulgated *Statement on Standards for Management Advisory Services, No. 1*, followed a year later (November 1982) by *Statements on Standards Nos. 2 and 3*. In 1982 the Institute began publication of *MAS Practice Aids* as well.

Elliot and Kuttner point out in their recent article, "MAS: Coming of Age," that "...recognition of management advisory services as a *separate* (emphasis added) type of service provided by CPAs is relatively recent."¹ From the MAS point of view they cite four major areas of service, the first of which is the development of information systems. According to them this service includes the review and development of computerized systems as well as assistance in the implementation of such systems in a number of business areas.²

The remaining three areas of advisory services are evaluating and forecasting, improving profitability, and improving organization responsiveness. Naturally, implementation of computerized systems can also contribute positively to activities in these three areas.³

The accounting profession is making overtures to recapture some of the EDP territory.

Additional evidence of the accountant's increased interest in and emphasis on MAS/EDP services can be found in a number of other places. Dowell and Hall suggest that information controls which may have been neglected might be restored through the use of "systems development and maintenance procedures."⁴ They envision that the development of such procedures would enhance the control of the systems, and would involve three parties: users, data processing professionals, and internal auditors. The writers suggest that there ought to be an "ongoing compliance audit" performed by the "corporate internal auditors...rather than operating personnel for two related reasons" both of which are rooted in the concept of independence. Although the internal auditors may assist in a system's development, they probably do not play a *major role*, and, secondly, since they "do not operate the system," they can be considered as being independent. In any event they would be involved in control capacities.⁵

Materials Requirements Planning and inventory controls are systems which rely heavily on EDP. Recent evidence indicates that accountants are taking or will be taking greater interest in MRP. Writing in *Management Accounting* in December 1982, B.B. Bowers states that, in the area of product costing vis-a-vis MRP, accountants have not given sufficient "attention to the development of automated production control systems..." and that they "should develop talent for production and inventory control techniques to enhance product costing, forecasting..., and inventory valuation and control."⁶

In a similar vein, D.P. Keegan of Price Waterhouse points out that

manufacturing control and cost accounting "are different sides of the same coin..." and he believes "there has been a tendency to exclude the financial aspects of inventory management from professional literature." He claims that if cost accounting requirements are part of the MRP system's design, the development of the system can be greatly improved.⁷

Up to this point examples of evidence indicating the accountant's increased interest and/or involvement in EDP have been those found in published articles. Further support, however, can be found in less obvious, but nonetheless relevant, places. One national accounting firm in advertising its computer software for manufacturing planning and control refers to itself as "the largest international management information consulting organization." In telephone directories some firms present advertisements which state as part of the services offered: "Management Consulting Services," and/or "Management Information Systems." These, and other references, indicate the current trend in providing professional services beyond the traditional accounting, auditing and tax functions.

In summary, therefore, the movement towards greater involvement by the accountants is present because the markets for their services appear to exist in computerized systems areas.

Under the assumption that such is the case and that the evidence supports the resurgency of accounting in the system/EDP environment, what behavioral changes or problems might arise? Often when behavior is discussed in relation to EDP, such discussion centers around the behavioral aspects of interaction between systems development teams (specialists) and the actual or intended users of the system or systems and the development of a change strategy. A.B. Carroll points out that "An awareness of human needs and behavior is as important a component as specialized knowledge" when dealing with the development of computer-based information systems.⁸ These behavioral aspects, however, are not addressed in this article. The issues addressed here are perceived behavioral changes or problems which stem from the resurgency of interest by accountants in the systems/EDP environment. For

the purposes of this presentation three aspects are identified and reviewed; namely: intraprofessional behavior, interprofessional behavior, and accountant/top management behavior.

Intraprofessional Behavior

Intraprofessional behavior as used here refers to those behavioral issues solely within an accounting firm or an accounting staff which occur because of the increased emphasis on MAS and MIS. While some changes have already occurred, and more are apt to take place, most of these intraprofessional changes do not seem to pose serious behavioral problems, but rather they are attitudinal and operational shifts within the organization. Perhaps the most all-encompassing shift is the "image changing" which seems to be taking place; that is, the shift away from the traditional CPA image towards one of more broad-based service to clients; viz. "full service consulting." Under this "umbrella," specific behavioral responses can or may occur. Will some staff, who are already accounting certified (CPA or CMA), feel pressure to acquire additional MIS/EDP training or education? Almost certainly so. Such is already the case in many organizations whether or not the training or education be formal or informal.

More specifically, though, there may exist two additional behavioral responses: (1) increased staff competition for the MAS/CIS engagements, and (2) the perceived need on the part of some staff to acquire MIS or data processing credentials (certifications). In the first situation, some accountants might well become so entrenched in MIS that they become almost nominal CPAs and *de facto* computer specialists. In the second situation the response would be somewhat parallel to those CPAs who feel the need to become CMAs as well. Some of the impetus for acquiring MIS competence and maintenance of such competence may stem from pressure within the firm based on the new focus of professional services provided to clients. A natural corollary to multiple credentials, which is already manifest, is membership by accountants in computer and/or systems oriented professional organizations.

Also within accounting exist some problems associated with attitudinal

changes towards computer literacy. Claims have been made that computer technology and implementation are often somewhat intimidating to those who lack knowledge and understanding. This intimidating effect on behavior, regardless of degree of intensity, may be more pronounced in the case of older accountants than in the case of younger accountants. Certainly such intimidation, if existent, must be overcome in those situations where the "older" or perhaps "computer-illiterate" supervisory accountant finds himself in an actual or pending leadership or review role.

Indirectly related to the intraprofessional behavioral changes are the potential changes in attitudes of students preparing for careers in accounting, both public and private. In the future the educational preparation for the field may well shift from concentration (major) in accounting with supplemental (minor) courses in CIS to concentration in CIS with supplemental courses in accounting. In other words the student may see his other role as one which emphasizes information systems, and one in which he or she needs only sufficient courses and knowledge to pass the CPA Examination. Some observers feel this trend may have already begun.

Further evidence of this shift comes from the profession which is encouraging the integration of computers in the undergraduate accounting curriculum. The AICPA *Final Report, Board on Standards for Programs and Schools of Professional Accounting* Curriculum Standard 4 states that advanced courses shall cover concepts in specific accounting areas and in "management advisory services, including data processing and the systems area."⁹

Interprofessional Behavior

Interprofessional behavior as used herein refers to behavior resulting from interaction between the accounting professionals in their MAS/CIS roles and the computer science/information systems professionals of client organizations, or, for that matter, professionals within the same company or organization. The potential behavioral problems appear somewhat more pronounced here than in the intraprofessional areas. As anyone familiar with auditing understands, there have always been potential, and in some cases actual, interpersonal behavioral

problems between auditor and client accountants. The potentially sensitive nature of such relationships could generally be ameliorated by the fact that the auditor was performing a function incapable of being performed by the client accountants; namely, the independent audit or attestation function.

This important difference, of course, is nonexistent when independent accounting MIS/EDP personnel are dealing with client MIS/EDP personnel. Thus the interpersonal relationships may well become more tenuous. Naturally, similar behavioral challenges could arise between an organization's own accounting staff and MIS/EDP personnel in any intracompany resurgency of accounting into those information systems or EDP areas which had previously been "neglected" by accounting. In essence one might view the potential problems as those stemming from the "protection of territorial rights."

In both cases cited in the previous paragraphs it would seem that management, in its establishment of the specific operational goals, ought to be cognizant of the potential interpersonal problems and take steps to stave off as many as possible. In the independent accountant/client relationships, the managements of both the firm and the client ought to plan on giving due consideration to the behavioral aspects of the engagement *a priori*. In the case of the corporate accountant/EDP specialists relationship, management of the company should spell out the operational parameters of the mission or function *and* at the same time spell out the behavioral parameters. This can be accomplished both by direct and indirect means ranging from direct appointment of the "incharge" element to the assignment of an individual leader who is personally skilled enough to blend together the two functions without friction.

A discussion of interprofessional behavior would be incomplete if it did not include the relationships between the accounting firms heavily engaged in MAS and their counterparts, management consulting firms. Both of these organizations have been competing with each other for some time, and, it appears, the competition will become more keen as firms attempt to expand their shares of the market. Suffice it to say, all the traditional behavior

A "sense of position" should be established for each party involved.

problems between or among competitors will continue to exist in varying degrees. Whether or not the behavioral problems of competition will be exacerbated by the accountants' movement towards acquiring a greater market share remain to be seen; however, it seems logical that accounting firms may well use their more broadly-based capabilities as important competitive selling techniques. Seemingly, any behavioral controls in these competitive areas would most likely evolve from professional codes of ethics of both accountants and management consultants. In addition, much has been written about the nature of independence when the accountant is engaged in MAS/MIS assignments with clients who are also audit clients. Regardless of positions, pro and con, on this matter, it will probably continue to linger as an issue in varying degree for some time.

Accountant Top Management Behavior

Although this article chiefly addresses the accountant's behavior with peers and other professionals as he or she becomes more involved in MIS/EDP, coverage would be incomplete without some review of the accountant's relationship to top management. Two recent articles addressed this issue from different points of view. In January 1983, "Cooking the Books" appeared in *Dun's Business Month*, and "Some Chief Executives Bypass, and Irk, Staffs in Getting Information" appeared in *The Wall Street Journal*.

In the first article Hershman and Sender point out how in a number of situations "middle management fudge the numbers to fool the boss" as means of meeting company goals,

enhancing bonuses, achieving promotions, and/or saving their jobs.¹⁰ The writers stress that one possible solution to the "cooking" of the books is "making sure that the company's incentive system doesn't encourage and reward dishonesty" by establishing effective internal audit systems designed to detect and discourage such practices.¹¹

In *The Wall Street Journal* article Mary Bralove indicates that CEOs may expand their use of executive information systems "to monitor the business and...to check up on..." performance. In other words, the computer-literate chief executive may no longer be as heavily influenced as in the past by staff personnel "who collect, interpret, and analyze" information prior to it being received by the CEO. The CEO may now seek out and find information for himself without going through intermediaries, and further, be able to check, evaluate, or "audit" information received from subordinates without their knowledge.¹²

Use of these executive information, or decision support, systems may elicit important behavioral reactions from subordinates, ranging from feelings of lost power to feelings of mistrust to fear of losing one's job. Obviously, one such important group of subordinates is corporate accounting, and, since the accounting system is a subset of the corporate information and decision-making system, corporate accountants are subject to the same behavioral attitudes as are others.

Under the assumption that both articles contain some predictive value; namely, increased use of more intense internal auditing and increased use of executive information systems, corporate accountants will most likely cope by modifying their behavior. On the plus side, the use of executive information systems and increased internal auditing may act to correct abuses and improve performance. On the negative side, such controls may decrease morale and/or encourage the

development of subsystems to "beat the controls." In either case, should such control systems be employed, both management and subordinates will learn to cope with the behavioral ramifications, be they either favorable or unfavorable. Certainly, in many cases attitudinal changes would be almost essential.

From the viewpoint of the independent accountant (auditor or MAS consultant) such sophisticated internal control systems might affect client relationships from the client's evaluation of the auditor's performance. The occurrence of such does not seem too likely currently because of time constraints and cost/benefit analyses. However, such sophisticated computerized executive information systems could possibly be used to resolve partially the old, and somewhat trite question, "Who audits the auditors?"

Concluding Comments

Whether or not the resolution of behavioral issues has lagged behind the development of sophisticated information systems has not been an issue discussed here. What has been presented here has been a review of some potential behavioral issues which are apt to stem from the accountant's resurgency into the MIS/EDP field. What seems rather apparent is that, as the systems become more complex and as the accountant becomes more involved, all parties must become more aware of the associated behavioral ramifications. Perhaps mutual respect and cooperation will be the two most important by-words. Certainly, knowledge and understanding of organization goals, and the methods of achieving those goals, are both important. One major consideration to be observed, however, should be the establishment of a "sense of position" for each party in any combined efforts, with, of course, the mutual respect for those different positions. Ω

NOTES

¹Merle S. Elliot and Monroe S. Kuttner, "MAS: Coming of Age," *Journal of Accountancy* 155 (December 1982): 66.

²*The CPA and Management Consulting*, cited by Merle S. Elliot and Monroe S. Kuttner, "MAS: Coming of Age," *Journal of Accountancy* 155 (December 1982): 67.

³*Ibid.*

⁴C. Dwayne Dowell and James A. Hall, "Restoring Information Controls," *Management Accounting* 64 (November 1982): 18.

⁵*Ibid.*, pp. 67-68.

⁶Billy B. Bowers, "Product Costing in the MRP Environment," *Management Accounting* 64 (December 1982): 27.

⁷Daniel P. Keegan, "Some Second Reflections on MRP," *Price Waterhouse Review*, 1977, Vol. 22, No. 3, (New York: Price Waterhouse & Co., 1977), p. 41.

⁸Archie B. Carroll, "Behavioral Aspects of Developing Computer-Based Information Systems," *Business Horizons*, January/February 1982, 25, No. 1, p. 42.

⁹American Institute of Certified Public Accountants, *Final Report, Board on Standards for Programs and Schools of Professional Accounting* (New York: American Institute of Certified Public Accountants, 1977), p. 8.

¹⁰Arlene Hershman and Henrietta Sender, "Cooking the Books," *Dun's Business Month*, January 1983, p. 40.

¹¹*Ibid.*, p. 47.

¹²Mary Bralove, "Some Chief Executives Bypass, and Irk, Staffs in Getting Information," *The Wall Street Journal*, 12 January 1983, pp. 1, 24.

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